

THE USE OF PLANT COMPOSITIONS FOR AREAS WITH A SHORT PERIOD OF INSOLATION

FOLOSIREA COMPOZIȚIILOR VEGETALE PENTRU ZONELE CU PERIOADĂ SCURTĂ DE INSOLAȚIE

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Abstract. Recent studies in the field of sustainable urban planning focus on the plant component, favoring the implementation and conservation of plant material at the highest possible level of quality and performance. In order to better understand the ideology of using dendrological and flowering plants in areas with low insolation, we resorted to their use in a proposal to arrange a private garden. The paper aims to present the methods of arranging private or public gardens taking into account, at the time of design, the needs and requirements of the beneficiary and also the elaboration of a proposal in case the space that is going to be arranged has atypical characters. Here reference is made to the way of designing spaces in which the degree of sunlight is reduced and involves treating them as spaces with semi-shade or shade. In the foreground of this work is the way we use shade and semi-shade plants and how the spaces that benefit from a low degree of insolation are capitalized and integrated.

Keywords: plant compositions, shade, *Lonicera nitida*

Rezumat. Studii recente în domeniul planificării urbane sustenabile pun accent pe componenta vegetală, favorizând implementarea și conservarea materialului vegetal la un nivel cât mai ridicat de calitate și performanță. Pentru a înțelege cât mai bine ideologia utilizării plantelor dendrologice și floricole în spațiile cu perioadă redusă de insolație am recurs la utilizarea acestora într-o propunere de amenajare a unei grădini private. Lucrare urmărește prezentarea metodelor de amenajare a grădinilor private sau publice ținându-se cont, în momentul proiectării, de nevoile și cerințele beneficiarului și totodată elaborarea unei propuneri în situația în care spațiul ce urmează a fi amenajat prezintă caractere atipice. Aici se face referire la modul de proiectare al spațiilor în care gradul de strălucire al soarelui este redus și implică tratarea acestora ca spații cu semiumbră sau umbră. În prim planul acestei lucrări se află modul în care utilizăm plantele de umbră și semiumbră și modul în care sunt valorificate și integrate spațiile care beneficiază de un grad redus de insolație.

Cuvinte cheie: compoziții vegetale, umbră, *Lonicera nitida*

INTRODUCTION

Plants, either floricultural or dendrological, have always been an indispensable element in the private gardens of every owner, but until the moment of the appearance of the public park concept, where the species were placed

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according to a specific criterion (Plummer, 2009), thought out in a plant composition and respecting certain principles, the plant arrangements around the houses were quite rustic, with elements from spontaneous flora and mostly predominated by vegetable gardens cultivated to provide food for the family (Bretzel *et al*, 2009). From this moment, this whole branch began to develop, knowing a real ascent and creating gardens with impressive compositions that remained in history due to their grandeur (Murphy, 2016).

Creating a private garden, park or recreation area is a very complex process (Charles, 2006). Such an arrangement does not only consist in stringing some plants taking into account only their aesthetic side, but it also includes the alleys that must be designed, the processing of the land, for example a sloping land will be terraced, the analysis of the soil to be sure that we use plants that integrate perfectly taking into account their ecological requirements (Costa *et al*, 2009). We cannot come up with a development proposal without doing some studies on that area (Zilemenos and Paraskevopoulou, 2017). We are interested in the degree of sunshine in all areas of the site, so we can make a correct zoning of species, soil type, etc. At the same time, we cannot make the proposal without taking into account the aesthetic contribution brought by plants to the site and how these plants harmonize (Orzek *et al*, 2009). An arrangement must be harmonious; thus, it is necessary to consider the color, habitus and size of the plants and to create a balance between them. To achieve a correct plant composition both from an aesthetic and spatial point of view, we must take these aspects into account (Waldheim, 2006).

MATERIAL AND METHOD

This work aims to present a method of setting up a shaded green space, taking into account, at the time of design, the needs and requirements of the beneficiary and at the same time developing a proposal in the situation where the space to be set up has atypical features (Dascălu, 2006). This refers to the design of spaces where the degree of sunlight is reduced and involves treating them as semi-shaded or shadowed spaces. In order to better understand the ideology of using dendrological plants in spaces with a reduced period of insolation, we resorted to their use in a proposal for arranging a private garden figure 1. The plant material proposed to be used are presented in table 1.

Table 1

The plant material proposed to be used in the arrangement

Dendrological material	Floral material
<i>Fagus sylvatica atropurpurea</i>	<i>Hosta plantaginaea</i>
<i>Corylus avellana</i>	<i>Convallaria majalis</i>
<i>Forsythia suspensa</i>	<i>Digitalis purpurea</i>
<i>Lonicera nitida</i>	<i>Stachys lanata</i>
<i>Cornus sanguinea</i>	<i>Aster novi – belgii</i>
<i>Hydrangea macrophylla</i>	<i>Ageratum mexicanum</i>
<i>Viburnum opulus</i>	<i>Fritillaria imperialis</i>
<i>Hedera helix</i>	
<i>Vinca minor</i>	

All these detailed observations were made with the aim of making a correct proposal in terms of the placement of the plants, the systematization of the alleys, the correct zoning of the site's functions so that the layout is correct, harmonious, beautiful and sustainable. In making the proposal, dendrological, floricultural and lawn species were used, according to the requirements of each area. In this work, in the foreground is the way in which we use shade and semi-shade plants and the way in which spaces that benefit from a reduced degree of insolation are capitalized and integrated. The species listed in table 1 were used as plant material in the shaded and semi-shaded areas.



Fig. 1. The plan and details of the existing situation

RESULTS AND DISCUSSIONS

In order to better understand the complexity of spaces that do not benefit from a high degree of insolation and at the same time to perceive as correctly as possible how important is the correct use of the species that meet these requirements but also how we can associate them correctly, we have opted for the creation of complex compositions, as can be seen in figure 2.



Fig. 2. Details of the proposed layout of the shaded spaces at the site level

The implementation of the development proposal was done in accordance with the requirements of the space, with the needs of the beneficiary, and in the first phase, a zoning of the space by functions was carried out. Thus, a rich color scheme, games of shapes and volumes, of shadows and lights, elements that soothe and calm the viewer, were used in the creation of the plant compositions. The species used in the plant compositions were chosen and distributed so that each of them has decorative elements throughout the year, and their decorative period is at different time intervals to maintain interest in each season of the year.

In order to increase the expressiveness of the space, it was proposed to place a carpet made of *Vinca minor* specimens at the base of the compositions, introducing into the landscape a special contrast between the color of the purple flowers and the green leaves.



Fig. 3. The lawn

The lawn proposed to be used, as can be seen in figure 3, is suitable for the shadow areas, lawn rolls with shade-resistant species will be used and in the semi-shade area, being formed by a combination of seeds consisting of *Festuca arundinacea*, *Poa pratensis* and *Lolium perenne* and for the rest of the areas a mix of *Poa pratensis*, *Festuca rubra*, *Festuca rubra* and *Lolium perenne* seeds was chosen.

CONCLUSIONS

This work wants to highlight the opportunities offered by shaded and semi-shaded areas and how to capitalize on them, since the arrangement of these spaces requires a detailed knowledge of the dendrological and floricultural species and, in particular, of their ecological requirements. Thus, the work exemplified a way of

arranging the species that tolerate this type of exposure and that do not change their decorative value when they are positioned in the shade or semi-shade.

All the areas within the example of spatial systematization that have this character in common were treated individually, and presented in detail taking into account all the factors that could influence the final result, thus creating a harmonious proposal that meets the needs of a modernist layout, representative of a private garden. The design proposal has always sought to create a balance between the zoning of the space, the functionality of the built-up areas and the decorative vegetation, ensuring a harmonious and pleasant connection between them. Thus, it can be seen how through a spatial, balanced and rational structuring of the plant components, in this proposal it has been shown how a dull space devoid of color and contrast can be transformed into a true oasis of peace and relaxation.

The purpose of this work is to represent a tool for improving the space related to a private garden, from a landscape point of view, and to create a pleasant and relaxing environment, while demonstrating that the basis of a successful arrangement is not only the built elements.

In conclusion, the proposed project wants to combine the useful with the pleasant, the decorative function with the sanogenic one, in order to arrange a space that will meet all the needs of a family and the requirements of a private garden.

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